

Remarks

A. Introduction

Claims 1-14 are pending in the application. The Examiner finally rejected the previously-pending claims either as anticipated by U.S. Patent No. 6,729,331 to Kay or as obvious over the combined disclosures of the Kay patent and U.S. Patent No. 5,769,338 to Welker. Although acknowledging that the valve mechanism of the Kay patent is designed for underwater usage and provides only on-demand purging of accumulated water, the Examiner nevertheless contends the Kay patent

does not limit the operation of the valve to underwater conditions, but includes surface conditions. Therefore, the operation of the valve in surface conditions would enable a curtain of air to be provided continuously when the valve assembly is in use.

See Office Action at p. 3.

B. Response to Interview Summary

1. “Continuous” Curtain of Air

During the interview, Applicants noted for the Examiner and her supervisor that *continuously* maintaining a curtain of purge air is a feature of the invention. Because the inventive valve assembly is especially adapted for respirators used to protect against toxic chemical and biological agents, reducing likelihood of unwanted gas ingress into the respirators is a significant aspect of the design. Accordingly, the air purge means of Applicants’ valve assembly is configured “so that the curtain of air is continuous when the purge inlet is connected to the air

pressure supply means and the air pressure supply means is activated.” See, e.g., Application at p. 1, ll. 2-3; p. 8, l. 17 through p. 9, l. 2; p. 16, l. 6 through p. 17, l. 2.

By contrast, purging of water from the valve cavity of the Kay patent occurs *only* when a wearer depresses push button 18. As noted in the Kay patent, push button 18 normally “is held in the *non-operative* condition by spring 12.” See Kay, col. 5, l. 52. Furthermore, Applicants understand the Kay patent to teach that depressing push button 18 shunts breathing gas to exhaust vent tube 23, thus diverting all or some of the breathing gas away from the wearer. See id. ll. 54-61. If such shunting were to occur *continuously*, as the Examiner erroneously contends, the wearer would risk suffocation.

During the interview, the Examiner’s supervisor indicated her belief that water purging may occur “continuously” in the device of the Kay patent whenever push button 18 is depressed. Stated differently, the Examiner’s supervisor appeared to define “continuously” as “at all times while the push button is depressed.” Without conceding the merit of the Examiner’s supervisor’s definition, Applicants proposed to the Examiner and her supervisor that claim 1 recite that “the curtain of air is continuous *when the purge inlet is connected to the air pressure supply means and the air pressure supply means is activated.*” The Examiner and her supervisor agreed this recitation clearly distinguishes the Kay patent and should render independent claim 1 allowable.*

*The Examiner and her supervisor also requested that Applicants change “for” to “in” in the first line of claim 1 so as to make even clearer that the claimed valve assembly will be used in a respirator. Applicants have complied with this request.

2. Curtain of Air Provided by “Air Exiting the Purge Outlet and Incident the Air Deflection Means”

Applicants also commented during the interview that claim 1, as originally drafted and as amended, identifies the curtain of air as being provided by “air exiting the purge outlet and incident the air deflection means.” According to the Examiner, exhaust vent tube 23 of the Kay patent corresponds to Applicants’ purge outlet, while baffle plate 9 of the Kay patent equates to Applicants’ air deflection means. See Office Action at pp. 2-3. Clear from Fig. 1 of the Kay patent, however, is that any air from exhaust vent tube 23 *never* exits incident baffle plate 9, instead exiting directly to the ambient environment. See Kay, col. 4, ll. 50-54. Hence, even adopting the Examiner’s construction of the Kay patent, such adoption would not match the language of claim 1. For at least this additional reason, all pending claims should be allowable.

3. No Reason Exists to Incorporate Vanes Into the Baffle Plate of the Kay Patent

Finally, during the interview Applicants challenged the Examiner’s allegation (as to claims 8-13) that it would be obvious to incorporate vanes from the Welker patent into baffle plate 9 of the Kay patent. See Office Action at pp. 5-6. The sole identified function of baffle plate 9 is to prevent pressurized gas from impinging on the underside of diaphragm 6. See Kay, col. 4, ll. 55-63. Contrary to the Examiner’s supposition, no benefit would be achieved by increasing the complexity of baffle plate 9 by incorporating vanes into it. Additional basis thus exists for allowance of some or all of claims 8-13.

Conclusion

Applicants request that the Examiner allow claims 1-14 and that a patent containing these claims issue in due course.

Respectfully submitted,



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